

WHAT IS CLAIMED IS:

1        1.    A wireless network for providing a packet data call  
2        connection between a source mobile station (MS) and a destination  
3        mobile station (MS) in a coverage area of said wireless network,  
4        said wireless network comprising:  
5            a first base station capable of wirelessly communicating with  
6        said source mobile station;  
7            a second base station capable of wirelessly communicating with  
8        said destination mobile station; and  
9            a mobile switching center capable of connecting said first and  
10       second base stations, wherein said first base station is capable of  
11       receiving a first message from said source mobile station  
12       requesting an MS-MS packet data call connection to said destination  
13       mobile station and, in response to said first message, said first  
14       base station initiates establishment of said MS-MS packet data call  
15       connection on a local IP network coupling said first and second  
16       base stations.

1        2.    The wireless network as set forth in Claim 1, wherein  
2        said first message comprises an Origination message having a  
3        service option field indicating that said MS-MS packet data call  
4        connection is requested.

1           3. The wireless network as set forth in Claim 1, wherein  
2       said first base station responds to said first message by  
3       transmitting a second message to said mobile switching center, said  
4       second message indicating that said MS-MS packet data call  
5       connection to said destination mobile station is requested.

1           4. The wireless network as set forth in Claim 3, wherein  
2       said second message comprises a CM Service Request message  
3       containing said service option indicating that said MS-MS packet  
4       data call connection is requested and containing a phone number  
5       associated with said destination mobile station and an IP address  
6       of said first base station.

1           5. The wireless network as set forth in Claim 3, wherein  
2       said mobile switching center responds to said second message by  
3       transmitting a third message to said second base station, said  
4       third message indicating that said MS-MS packet data call  
5       connection is requested.

1           6. The wireless network as set forth in Claim 5, wherein  
2       said third message is a Paging Request message.

1           7.    The wireless network as set forth in Claim 5, wherein  
2   said second base station responds to said third message by  
3   transmitting a fourth message to said mobile switching center, said  
4   fourth message containing an IP address of said second base station  
5   on said local IP network.

1           8.    The wireless network as set forth in Claim 7, wherein  
2   said fourth message comprises a Paging Response message.

1           9.    The wireless network as set forth in Claim 7, wherein  
2   said mobile switching center responds to said fourth message by  
3   transmitting a fifth message to said first base station, said fifth  
4   message containing said IP address of said second base station and  
5   a mobile identifier value associated with said destination mobile  
6   station.

1           10.   The wireless network as set forth in Claim 9, wherein  
2   said fifth message comprises an Assignment Request message  
3   containing said IP address of said second base station said mobile  
4   identifier value.

1           11. The wireless network as set forth in Claim 9, wherein  
2       said first base station responds to said fifth message by using  
3       said IP address of said second base station to establish a packet  
4       data bearer connection to said second base station via said local  
5       IP network.

1           12. The wireless network as set forth in Claim 11, wherein  
2       said first base station transmits said mobile identifier of said  
3       destination mobile station to said second base station in order to  
4       identify data packets from said source mobile station that are  
5       directed to said destination mobile station.

1           13. For use in a wireless network comprising: i) a first base  
2 station that wirelessly communicates with a source mobile station  
3 (MS), ii) a second base station that wirelessly communicates with a  
4 destination mobile station (MS), and iii) a mobile switching center  
5 that connects the first and second base stations, a method of  
6 providing a MS-MS packet data call connection between the source  
7 mobile station and the destination mobile station comprising the  
8 steps of:

9           in the first base station, receiving a first message from the  
10 source mobile station requesting a MS-MS packet data call  
11 connection to the destination mobile station;

12           in response to the first message, establishing the MS-MS  
13 packet data call connection on a local IP network coupling the  
14 first and second base stations.

1           14. The method as set forth in Claim 13, wherein the first  
2 message comprises an Origination message having a service option  
3 field indicating that the MS-MS packet data call connection is  
4 requested.

1           15. The method as set forth in Claim 13, further comprising  
2 the step of transmitting a second message from the first base  
3 station to the mobile switching center, the second message  
4 indicating that the MS-MS packet data call connection to the  
5 destination mobile station is requested.

1           16. The method as set forth in Claim 15, wherein the second  
2 message comprises a CM Service Request message containing the  
3 service option indicating that the MS-MS packet data call  
4 connection is requested and containing a phone number associated  
5 with the destination mobile station.

1           17. The method as set forth in Claim 15, further comprising  
2 the step of transmitting a third message from the mobile switching  
3 center to the second base station in response to the second  
4 message, the third message indicating that the MS-MS packet data  
5 call connection is requested.

1           18. The method as set forth in Claim 17, wherein the third  
2 message is a Paging Request message.

1           19. The method as set forth in Claim 17, further comprising  
2 the step of transmitting a fourth message from the second base  
3 station to the mobile switching center in response to the third  
4 message, the fourth message containing an IP address of the second  
5 base station on the local IP network.

1           20. The method as set forth in Claim 19, wherein the fourth  
2 message comprises a Paging Response message.

1           21. The method as set forth in Claim 19, further comprising  
2 the step of transmitting a fifth message from the mobile switching  
3 center to the first base station in response to the fourth message,  
4 the fifth message containing the IP address of the second base  
5 station and a mobile identifier value associated with the  
6 destination mobile station.

1           22. The method as set forth in Claim 21, wherein the fifth  
2 message comprises an Assignment Request message containing the IP  
3 address of the second base station the mobile identifier value.

1           23. The method as set forth in Claim 21, further comprising  
2 the step, in response to the fifth message, of using the IP address  
3 of the second base station to establish a packet data bearer  
4 connection from the first base station to the second base station  
5 via the local IP network.